



P/35-6 CIP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Krysiak et al.

Serial No.: 09/544,878

Group Art Unit: 3643

Filed: April 7, 2000

Examiner: Valenti, A.

For: SEEDING TREATMENTS

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Assistant Commissioner for Patents
Washington, D.C. 20231

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Response
10/8/02
H. Jones*
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RESPONSE TO OFFICE ACTION

GROUP 3600

Sir:

This is in response to the Office Action mailed July 1, 2002.

The Examiner has rejected claims 4-21 as being obvious over Kitamura in view of The Center for Professional Advancement, Briquetting, Pelletizing, Extrusion and Fluid Bed/Spray granulation by Engelleitner.

Regarding claims 19-21, the Examiner states that Kitamura teaches that it is old and well-known to make seed capsules in a single apparatus by preconditioning the seed with a binding agent while tumbling the seed; conditioning the seeds by tumbling the seed in a bed of fine particulate to create layers of matter about the seed. (Kitamura Col. 1 lines 30-40 and Claim 1). Kitamura is silent on a tumble/agitation agglomeration operation. The Examiner states that Engelleitner teaches that the tumble/agitation agglomeration operation is an old and well-known means of adding mass. The Examiner states that it would have been obvious to apply the teachings of Engelleitner to the teachings of Kitamura since the modification is merely the application of a known

technology as an alternative equivalent means of encapsulation selected to meet certain manufacturing parameters.

The Examiner states that Kitamura inherently improves germination of the seed since the seed coat increases the survival rate of the seed in a mechanical sewing operation. The Examiner suggests that applicant submit an affidavit under 37 CFR 1.132 illustrating that the tumble/agitation agglomeration process/machine is a different and unique process from the liquid agglomeration process.

Applicant submits the Declaration of Lee Hoffman. Mr. Hoffman has 26 years of experience in the field of agglomeration. (Hoffman Declaration Para 1). Mr. Hoffman has reviewed the application of the present invention, the Kitamura patent, 4,250,660 and The Center for Professional Advancement, Briquetting, Pelletizing, Extrusion and Fluid Bed/Spray granulation by Engelleitner. (Hoffman Declaration Para 2 and 3).

In the world of agglomeration (particle size enlargement), there are four distinctively different types of processes: agitation, pressure, liquid and thermal. (Hoffman Declaration Para 4). The process of the present invention is classified as agitation, while the process disclosed and taught by Kitamura requires liquid agglomeration. This can be more clearly understood when the methods and equipment used to produce such products are explained below. (Hoffman Declaration Para 5).

Agitation is defined as agglomeration by tumbling (growth). Particles are adhered together by use of balling drums, pans, cones and mixers via impact and tumbling. The resultant shape is a sphere. Agitation agglomeration can use the following equipment: mixers (planetary, cone, ribbon, pintype, drum, counter-current, vertical, paddle,

pugmills), Disc pelletizers (pan granulators), drum pelletizers and cone pelletizers.

(Hoffman Declaration Para 6).

Pressure agglomeration utilizes methods such as extrusion presses, pelleting machines (pelletized), piston presses (tableting) and roller presses (briquetting, compacting). The pellets are formed by pressure imparted upon the materials. The resultant shape is a cylinder for products made with pelleting machines and extrusion presses. Pressure agglomeration can use the following equipment: roller presses (roll briquetters, roll compactors), piston/ram presses, pellet mills (ring die, flat die), extruders (auger, screw, screen, basket), tablet presses. (Hoffman Declaration Para 7).

With Liquid agglomeration, the liquid spray solidifies into a solid. Liquid agglomeration can use the following equipment: spray dryers, prill towers, spray/fluid bed, granulators, mixers for oil agglomeration. (Hoffman Declaration Para 8).

Thermal agglomeration requires the addition of an external heat source to result in particle bonding. Typical bonding includes sintering, induration, calcining, and a form of flaking. This thermal flaking requires a device that spreads paste or melt as a thin film on the surface of a rotating drum: the film is then solidified by cooling water and scraped off the drum as flakes. Thermal agglomeration can use the following equipment: sinter strands, traveling grates, rotary kilns, shaft furnaces and drum/belt flakers. (Hoffman Declaration Para 9).

The present invention relates to a method of making seed capsules in a single apparatus by a tumbling/agitation agglomeration operation comprising: preconditioning the seed with a binding agent while tumbling the seed. The seeds are conditioned by tumbling the seed in a bed of fine particulate to create layers of matter about the seed.

The preconditioning and conditioning steps can be repeated to add additional layers to the seed. (Hoffman Declaration Para 10).

The Kitamura process is defined as a liquid agglomeration process. The process of Kitamura is a coating process that coats a seed with a preconditioned coating material that requires a coating machine. Coating machines are a liquid agglomeration process, not an agitation agglomeration process as claimed in the claims of the present invention. The machines and the processes are different. Sugar coating machines which are described by Kitamura are widely used in the pharmaceutical and food industries. They are also used for roasting and heating beans and edible nuts or seeds. Heat is applied to the pan as it rotates to cause a layering effect. Again, this is a coating technique, not an agitation technique. The fluidized bed in Kitamura is also being used for a coating technique and not as an agitation technique as described in the present invention. (Hoffman Declaration Para 11).

Kitamura describes a liquid coating process and not an agglomeration operation comprising agitating and tumbling seeds with fine particulate in an apparatus for agglomeration which wraps layers of fine particulate around the seed. (Hoffman Declaration Para 12).

The Examiner states that Kitamura is silent on a tumble/agitation agglomeration operation, but that Engelleitner teaches that the tumble/agitation agglomeration operation is an old and well-known means of adding mass. The Examiner states that it would have been obvious to apply the teachings of Engelleitner to the teachings of Kitamura since the modification is merely the application of a known technology as an alternative equivalent

means of encapsulation selected to meet certain manufacturing parameters. (Hoffman Declaration Para 13).

It would not be obvious to modify Kitamura with Engelleitner. Modifying a liquid agglomeration method with a tumble/agitation method is not an alternative equivalent means. As stated above different products are produced by using different agglomeration methods. Further the equipment used by liquid agglomeration and tumble/agitation are different. (Hoffman Declaration Para 14).

Kitamura teaches a process to produce coated seeds using a preconditioned coating material. Although the process of Kitamura results in ease of mechanical sowing and handling and long term storage, it does not improve germination/establishment performance. (Hoffman Declaration Para 15).

The Examiner states that it would have been obvious to modify Kitamura with any of the machines listed in claims 4-18 since these are merely alternate equivalent agglomeration machines that perform the same intended function of agglomerating particles with a coating and one would select a particular agglomeration machine to satisfy different economic and time parameters and to accommodate different types of fertilizer or nutrient coatings. (Hoffman Declaration Para 16).

The tumble/agitation agglomeration process/machine is a different and unique process from the liquid agglomeration process. As stated above different products are produced by using different agglomeration methods. Further the equipment used by liquid agglomeration and tumble/agitation are different. The selection of a particular agglomeration machine is based on the type of process and product one wishes to

produce, not to satisfy different economic and time parameters or to accommodate different types of fertilizer or nutrient coatings. (Hoffman Declaration Para 17).

The present invention relates to a method of making seed capsules in a single apparatus by a tumbling/agitation agglomeration operation. The seeds are preconditioned with a binding agent while tumbling the seed. The seeds are then conditioned by tumbling the seed in a bed of fine particulate to create layers of matter about the seed. The preconditioning can comprise spraying a precoated material on the seed and subsequently driving off any binding agent used to apply the particulate layers on the seed. The method can include the seeds being fed continuously into the apparatus. Further the preconditioning and conditioning steps can be repeated to add additional layers to the seed.

Regarding claim 22, the Examiner states that Kitamura as modified is silent on the preconditioning and conditioning steps are repeated to add additional layers to the seed. The Examiner states it would have been obvious to modify the teachings Kitamura since the modification is merely duplicating the process to provide a more comprehensive seed coat and does not present a patentably distinct limitation.

As stated above, since Kitamura does not teach or make obvious a tumble/agitation agglomeration operation, it would not have been obvious to modify the teachings of Kitamura.

The type of machines described by Kitamura are coating machines for a liquid agglomeration process, not an agitation agglomeration process as claimed in the claims of the present invention. The machines and the processes are different. Therefore Kitamura does not anticipate or make obvious the claims of the present invention.

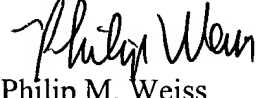
Applicant believes the application is now in condition for allowance.

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October 1, 2002

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Respectfully submitted,



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